

THE Gleaner

NATIONAL AGRICULTURAL COLLEGE



FINAL ISSUE
SPRING 1958

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Gleaner

NATIONAL AGRICULTURAL COLLEGE

DOYLESTOWN, BUCKS COUNTY, PENNSYLVANIA

VOL. LIII

SPRING, 1958

No. 2

Let the farmer for evermore be honored in his calling, for they who labor in the earth are the chosen people of God.

THOMAS JEFFERSON

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EDITORIAL

—SCHOOL SPIRIT

At the present time, school spirit on our campus seems to be at its lowest ebb. We present the following evidences which the average Aggie needs to give some thought toward correcting this situation:

1. About 50% of the students have never even heard the school song, yet alone not know the words to it.
2. Attendance and support at football, basketball, and baseball games is very low. Most students would rather go to the movies.
3. At school assemblies (involving sports and otherwise) the participants usually outnumber the audience.
4. The Glee Club draws no interest whatsoever, and most students have never heard it perform.
5. School publications have few voluntary writers and usually have to sweat blood to make deadlines.
6. Clubs are generally supported by only the hard core of members and are attended by men who like to sit back, listen, and let somebody else do the work.
7. Class meetings are attended by the class officers and their roommates who sit six or eight rows back from the speaker and sleep.
8. All attempts to rouse school spirit such as pep-rallies, bon-fires, etc., would make better zombie meetings, and generally result in lowering the morale rather than raising it.
9. We have two cheers which a few hearty souls yell at the basketball games, when the coach gets angry.
10. Any brave men attempting to be cheer leaders are ridiculed and laughed at until they are forced to quit.
11. "A"-Day week-end is considered by some a good week-end to spend at home. The number of

people who seem to be interested in this school on "A"-Day usually surprises most students.

12. The coaches work half the season trying to build up the spirit of their team which should have been present to start with. In addition, the coaches are subject to ridicule.
13. Intra-mural teams are open only to those students who are on the good side of the team captain. Any amusement gained from the games is gotten from making fun of the players, rather than the sport itself.
14. Any facilities for the student's comfort such as game rooms and student lounges are considered good places to throw trash, to enter with muddy feet, or in which to show off one's strength by breaking furniture or equipment.
15. Any social events on campus such as dances are judged "good" or "lousy" before the events are even held, or are not supported by one student group because — "they didn't come to *our* dance!"

Can any of us successfully deny the foregoing? Now—how to improve the situation? The *Gleaner* offers the following suggestions:

(a) Regular required-attendance assemblies should be held. The programs could include speakers, glee-club and band concerts, and pep-rallies, and could terminate with the singing of the alma mater. Until other arrangements are made, the Student Council could plan the program.

(b) The Student Council should be asked to pass regulations which prohibit the ridicule of cheerleaders, intramural team members, and others who are maligned by the ignorance of a few, and which require all members of the student body to know the school song and the school cheers.

(c) Since our present school auditorium is too small for meetings of the

entire student body, arrangements should be made to hold assemblies in larger rooms such as the rear of the Administration Building, or in the dining hall.

(d) Holding school social events on campus should be encouraged.

(e) Other aspects of school spirit would develop in time, if these requirements are carried out.

(f) But, immediate student interest in a "Better-School-Spirit" campaign, as well as the co-operation of the Student Council, are necessary.

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HONOR AGGIES

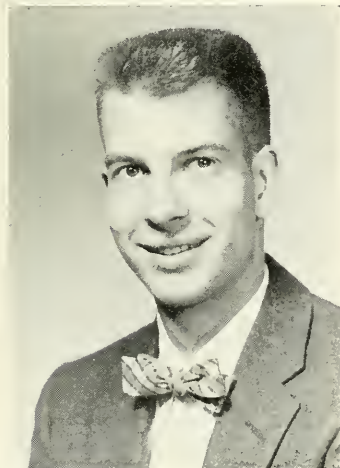
*by Joe Shinn '59
Phil Winkie '58
Hunt Ashby '58
Richard Prins '58*

Richard L. Schadt has been selected as an Honor Aggie this spring. "Dick," as he is known by his classmates, is an Ornamental Horticulture major.

Dick was born and raised in Bethlehem, Pennsylvania, where he graduated from Fountain Hill High School in 1954. He entered N.A.C. the same year with the Class of '58. His main interest is Landscape Architecture. Dick says, "After establishing myself financially, I intend to go to graduate school and earn a master's degree. Eventually, I want to develop a landscaping business of my own." He hopes to obtain a job in a landscaping department of a large firm in order to get experience. Marriage plans are set for the very near future.

His activities at N.A.C. include the Glee Club and the Horticulture Club. He has been a key figure on the "A-day" committee, holding such offices as Publicity Chairman and Treasurer. Dick's "A-day" exhibits in the Ornamental Horticulture field have received awards from First Prize to Grand Champion. His scholastic standing shows that he is in the upper one-fourth of his class.

For Richard L. Schadt we wish to voice the most hearty of cheers.



Richard L. Schadt



Ted Dornseifer

Ted Dornseifer, who hails from Huntington Valley, Pa., is another member of our student body who has been chosen an Honor Aggie.

He attended North Catholic High in Philadelphia, and after graduating from there he attended Penn State, where he majored in Dairy Manufacturing. Later he traveled and saw such places in Austria, Germany, and other European countries. His many experiences are well worth listening to. Ted entered N.A.C. in the fall of 1955 and is majoring in Food Industry. When asked how he likes N.A.C., he replied, "There is a closer relationship between the student and professor, and I feel more can be learned at a smaller school."

Although he lives off-campus, Ted engages in many activities at the college. He has been the president of the Food Industry Club for two years, and a member of the "A-day" Committee.

With his helpful attitude and friendly smile, Ted has won many friends while attending college. His ambition is to attend graduate school, and eventually enter into Food Research and the development of new foods.

With his background, we feel sure he will achieve his goal and wish him much success in his field.

Walter Coward, who is from Camden, New Jersey, has also been selected as an Honor Aggie.

He attended the Merchantville High School and was a member of the Senior-Cabinet. In the fall of '54 Walter joined us here at N.A.C. He is noted for his quiet ways, but makes up for them with action. He has been vice-president of the Class of '58 for three years. Also, he has served as vice-president of the Glee Club, president and founder of the Agronomy Club, and on the "A-day" Committee.

Walter has been an active participant in all three intramural sports — football, basketball, and softball. Even with his many extra-curricular activities, Walter has managed to keep above a B average in his studies for all four years at N.A.C.

Last summer he visited with Santiago Fonseca in Bogota, Colombia. Walter believes that the greatest lesson he learned from this trip was that people are basically the same everywhere. He strongly advocates that college students travel during their vacations.

After graduation in May, Walter will work as an agronomist for the International Voluntary Services, Inc., in Laos (Indo-China).

In two years he plans to come back to the U.S. and get his master's degree in Agronomy.

(continued next page)



Walter Coward

MAN OF THE MONTH *by Harold Risen '58*

Our Man of the Month is Dr. George E. Webster.

Dr. Webster was born and raised on a 450-acre dairy and maple products farm located near Danville, Vermont. This farm has been owned by the Webster family since 1858.

Dr. Webster received his elementary and secondary education in Danville. While in high school he was active in journalism, dramatics, and basketball, and was his class treasurer. He received a scholarship to the University of Vermont for his outstanding work in journalism.

At the University of Vermont, Dr. Webster majored in Dairy Production and Manufacturing with a minor in Agricultural Education.

After receiving his Bachelor of Science degree, he taught Vocational Agriculture at Poultney, Vermont. Then in 1943 he received his Masters degree from Cornell University, where he majored in Agricultural Engineering and minored in Agricultural Education and Agricultural Economics. Then in 1952 Dr. Webster received his Doctorate from Cornell.

Dr. Webster has had varied experiences in the field of Agricultural Education. He taught Vocational Agriculture at Poultney High School for four and a half years. For four years he was



Dr. George E. Webster

State Superintendent of Adult Education at the University of Vermont, serving eight communities. He also directed a State School of Agriculture for post-high-school students in Randolph, Vermont, for seven years.

His many interests include farming, a summer camp in Wheelock, Vermont, Scouting, Rotary Club, community affairs and Parent Teachers

Associations. He also is highly interested in Early American history, antiques, Colonial architecture, and the like.

Dr. Webster is strictly a family man and a strong believer in our American heritage. He follows a philosophy of life which entails these ideals: family life, better education, the do-it-yourself approach, and the study of geriatrics.

Dr. Webster's family includes his wife and three children, a boy and two girls, aged 13, 10, and 7 respectively. All of the Webster children are interested in music and swimming.

Dr. Webster came to the National Agricultural College in 1952. He picked Bucks County as a place to live and work because of its colonial heritage, which he and his wife favored.

Dr. Webster thinks N.A.C. has a great potential since it is the only college in Bucks County and because of the emphasis on practical agriculture.

In the future, Dr. Webster's plans include much travel, with a possible trip to England.

The student body of N.A.C. is proud to have a man of Dr. Webster's many interests and experiences as their *Man of the Month*.

HONOR AGGIES

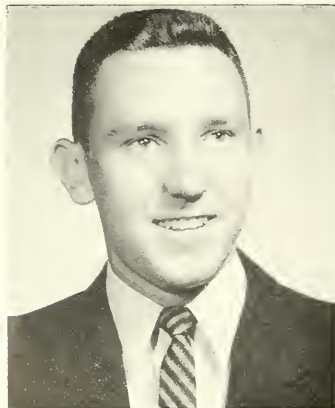
(continued from page 5)

One more Aggie to receive this honor, is a quiet and modest senior dairy major, Bruce Holck. During the past four years, Bruce has made his presence known in spite of his quiet ways. He has been a credit to his school and classmates.

Bruce was originally from Cranford, New Jersey, but recently moved to Newark, Delaware. He attended Cranford High School, graduating in 1954. While attending C.H.S. Bruce was quite active in athletics. He was chosen on the All-State soccer team and set a school record by scoring four goals in one game. In the winter and spring months Bruce participated on the indoor and outdoor track team. The relay team of which he was a member won county and state championships.

Since N.A.C. does not have a soccer or track team, Bruce had to turn to other sports. As a sophomore he played J.V. basketball and by the time

his junior year rolled around he was good enough to make a varsity letter. Before his sophomore year, Bruce had never played on an organized basketball team. The senior class intramural



Bruce Holck

teams would not have been the same without him. For the past 3 years he has played intramural softball and football. Another school sport at which Bruce is very adept, is ping pong. As soon as he heard a team was being organized he was one of the first to try out and make the team.

His main interest here in school is the dairy field. Before enrolling at N.A.C. Bruce spent several summers in New York state on a dairy farm. All of his summers since his freshman year have been spent the same way. He has a devoted interest in his work which you don't find very often. For the past three years, Bruce has shown a dairy cow on "A-day" as a member of the Dairy Society. This year he has been chosen president of the Dairy Society. He is also the secretary of the Varsity Club, a job which involves much work and time.

What will Bruce be doing after graduation? His close friends are sure they'll be able to find him on a dairy farm of his own.

STUDENTS FROM OTHER LANDS

by Leonard Goldentyer '58

Joe Shinn '59

One of our foreign land students for this issue is a great music lover and a traveler to many countries.

Shucre Ernesto Zablah, "Ernie" to us at N.A.C., was born in El Salvador, San Salvador, Central America, and graduated from a private Catholic high school in San Salvador.

In September, 1952, he came to the United States and enrolled in the Northwest High School in Jackson, Mississippi. The school gave Ernie credit for his other high school work and after one year of English courses he got a Northwest High diploma.

In New York City, in 1954, a college advisor informed Ernie about the National Agricultural College. In September of that year he enrolled at N.A.C. in the Class of 1958.

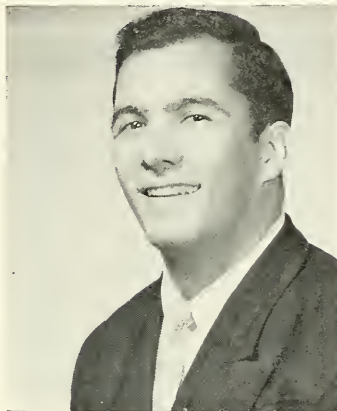
For Sophomore practicum in 1956, Ernie worked on a general farm in Elsinor Valley, California, and in 1957 Burpee's Fordhook Farm, adjacent to N.A.C., was his employer. At both jobs he worked on seed planting, production, and transportation.

Ernie says he chose N.A.C. as his college because he could contact many students and get individual instruction here. He also likes the practical work which accompanies the theory.

Although Agronomy is his major, Ernie has had membership in both the Agronomy and Animal Husbandry clubs.

His activities in the Glee Club and his record collections, both at N.A.C. and El Salvador, show what a great music lover he is.

Ernie has travelled in many countries, including Palestine, France, Cuba, Mexico, and Guatemala. After graduation Ernie wants to put his college education to use on his family's 1100-acre cotton and coffee plantation. Everyone that knows Ernie is sure he will return to Central America and accomplish this goal. Our best wishes go along with him. The Class of 1958 in particular says: "Good luck," Ernie Zablah.



Shucre Ernesto Zablah

Another one of our fellow-students from a distant land, Chan Ho Lee, comes to the National Agricultural College from Seoul, Korea, on the opposite side of the globe.

A Food Industry major in his junior year, Chan has become a well-known figure about the campus. His cheery smile and great knowledge of human nature has won the respect of many, while his sincerity and reserve hint of his sagacity.

Chan is a man of many skills, most of which are known only to his closest friends. For instance, he is adept at Jiu Jitsu, an Oriental type of sport and self-protection, and can perform feats all out of proportion to his size and weight. He has been known, when in a jovial mood, to touch the top of a door frame with his toe, by kicking well above his own height. His storytelling ability, too, is familiar to those who have been fortunate enough to hear him recount some of his many experiences.

The story of Chan's life is one worth hearing. Born in Pyoungteak, Kyounggi-da, Korea, Chan had a peaceful early life. But Korea was destined to lose its peace, as first Japan and then the Communists occupied the country. The son of a doctor, he has three sisters, and a brother who has been missing ever since the last war. After

he finished high school, Chan attended the Korean Military Academy; but, while in his junior year, the war interrupted, and he was immediately commissioned a Lieutenant of the R.O.K. Army.

It was during this term of service for his country, fighting the Communists, that Chan met his present sponsor, Colonel Carlyle Klise, who was then attached as a Korean military advisor with the U. S. Army.

Chan Ho Lee came to the United States and the National Agricultural College in July, 1955. His knowledge of the American way of life and the English language was very slight; and, the astonishing progress he made in adjusting to these difficulties is only typical of his achievements.

Chan Ho chose Food Industry as his major because very few Korean students in America are studying this subject, and, of course, it will be very useful when he returns home. Korea is largely an agricultural nation, and much improvement, says Chan, can be made in the production, preservation, and distribution of foods for his people.

We are proud to know Chan Ho Lee, and proud to say that he attended the National Agricultural College — may peace and prosperity follow him everywhere!



Chan Ho Lee

JUST A LITTLE BULL—

by John Plog '59 and Frank McConnell '60

John Plog saw the bull grow, witnessed the evolution from calf to Grand Champion—here is his account.

The annual Pennsylvania Farm Show was only a few weeks away, and our newly acquired Hereford bull was on the threshold of his memorable regal reign.

Dr. Tibor Pelle, Head of the Animal Husbandry Department, and Bart Glass, the bull's fitter and showman, were instrumental in the colleges' buying Cwato Heir R. 514th at the Bengal Farms Dispersal on November 23, 1957. This bull calf by "The 89th" had been purchased by Bengal Farms at the Cairnwood Farms Dispersal of August 3, 1957. The calf was highly regarded at Cairnwood and in their sale catalogue Bengal Farms had this to say about him, "—if you want a top prospect for next year he could be it, he has a nice head, stands on good straight legs that are in the right place and is a Zato Heir, this calf will be hard to beat next year." The bull's pedigree is as follows:

CWATO HEIR R. 514TH 9837875

Calved April 21, 1957

SIRE: CV Zato Heir 89"

9142626

TR Zato Heir 43" Paramount Onward
6263526 Dom. 16" 5903162

Maurine 3" O'Sullivan F. 0514
5167877 5295555

DAM: CW Paty D206"

8160937

TR Zato Heir CK Cruiser D. 17"
Tonette T. 134" CK Kathleen 4"
Texas Tone 45" Morlunda Letston 4"
Maudine 7" O'Sullivan Carol

Yes, it was only a few weeks before the show and fresh straw bedding, washing with sweet smelling soaps, countless brushings and curlings of his dark red hair coat, his special "Champion" feed, and last but not least, his very own Holstein nurse cow helped him prepare for his week at the Farm Show.

Finally on the morning of January 11th, five sleepy fellows (the Sophomore Class dance having been held the night before) loaded the animals to be shown, equipment and finally themselves, into a nine-horse van in true Noah's Ark fashion, supervised by Noah himself, Harry Hopkins.

Once at Harrisburg, "Jughead," as Bart affectionately referred to him, became the object of a great deal of attention. You would think all this fuss might have disturbed "our boy,"

but it didn't. In fact, his appetite greatly improved. Before we knew it the big day had arrived.

It Wasn't Luck

Frank McConnell was present in the ring when the bull was shown. Here's his story.

As I walked behind our bull being led to the show ring by the capable cattleman Bart Glass, I couldn't help but wonder what the outcome of this class would be. He looked and walked like a champion and was fitted by obviously experienced hands. Now if the judge, Mr. Frost, would just see him and like him as much as we did.

He was now led into the ring to join the others in his age class. As he moved, he showed presence and boldness and when stood up he looked the part of a champion. He seemed to stand out among the others in his class like a bright yellow daisy off in a green field. As the class proceeded it looked as if our bull was going to be the one to beat. He was finally given the nod for first place in his class and paraded up for his ribbon. Everyone was very happy, but the tension only surmounted with this win, for the Grand Championship would follow in a few short minutes. In the Grand Cham-

pionship all of the winners from the various age group classes meet and the Grand Champion Hereford Bull of the show is determined. Quickly hands were busy with scotch combs and brushes to get our winner ready to meet the older and larger bulls. Soon he was parading before Mr. Frost once more, looking more brilliant than ever. In an amazingly short time the judge had pulled our favorite out of the line-up and put him in position for the Grand Championship of the show. By this time every one was feeling the excitement. Bart was receiving many congratulations for the professional job he did. I knew by his smile that Dr. Pelle was very proud and happy, and very rightfully so. By this time the banner was presented, the pictures all taken, and I was following our bull back, this time knowing we had a champion.

Of course it's all history now but we'll never forget how one of the youngest bulls in the Hereford show brought home the Grand Champion honors to N.A.C. And we're sure Cwato Heir R. 514th, who the Hereford Journal calls a "promising youngster," has not seen the end of his winning days.



Bart Glass and "Cwato" at Harrisburg

RADIATION IN HARNESS

by Ted Dornseifer '58

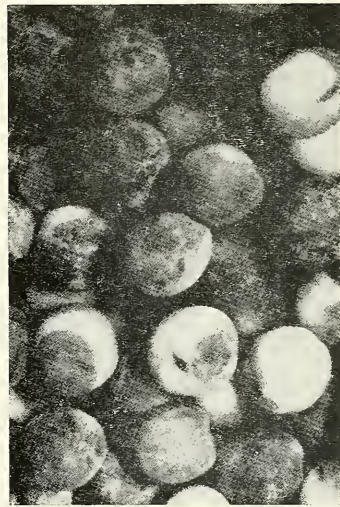
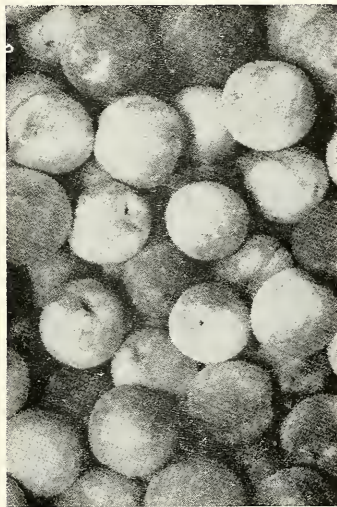
In the food industry, the success of new process is determined by analyses of the products produced by it. If the new process enables the uniform production of new or improved foods that meet a consumer need at a reasonable cost, the process will most likely be adopted. Commercial possibilities of radiation sterilization must be evaluated by these same criteria.

Radiation sterilization is the first promising innovation in food sterilization since Nicholas Appert discovered the art of canning in 1809. On an experimental basis, radiation sterilization of foods has been accomplished using cathode or beta rays, gamma rays, and X-rays. All three types of radiation destroy bacteria at about the same dosage level—usually 1,500,000 to 3,000,000 rep (roentgen equivalent physical) is sufficient. By comparison, the estimated lethal dose for man is 800 rep and for insects about 25,000.

With accelerator-produced cathode rays, sterilization dosages are achieved in a matter of seconds. However, the effective depth of penetration into a moist food is about 0.5 cm for each Mev (million electron volt) of particle energy, limiting the food thickness. Simultaneous irradiation from the top and bottom would enable doubling the thickness. It is apparent that if cathode rays are used for sterilization of foods, either thin layers of food must be treated, and the treatment must be followed by aseptic packaging, or the packages of food must be sufficiently thin to permit in-package sterilization.

Gamma rays emitted from gross fission products will penetrate 6 to 9 inches of water before losing half their energy. Using proper radiation geometries, gamma rays could be used to sterilize No. 10 cans of food.

Today, the efforts of the food industry, universities, research institutions, the government, and the military are being capably coordinated in the Quartermaster Food and Container Institute radiation sterilization program. The food industry regards such research as having the possibility of eventually changing containers, prepa-



*Treated Versus Untreated
Radiation Treatment of Peaches*

ration and processing methods, and distribution and marketing practices of food products.

With regard to cost and production rates, cathode-ray accelerators can be obtained from the 1-Mev 25-watt size costing \$20,000 up to the 3 to 5 Mev 12-kv ones costing \$500,000. The larger units, utilized at full beam capacity, are capable of sterilizing food at approximately 5,000 lb./hr. Estimates based on 5 year amortization of equipment, plus operating costs indicate that radiation sterilization would cost 2 to 8 cents per pound. For comparison, a single line pea cannery capable of canning 12,000-15,000 lb./hr. uses steam at 01002 cents/lb. for sterilization. Canned ham, produced at 10,000 lb./day, requires about 0.1 cent/lb. for steam.

Estimates on using gamma radiations from gross fission products cannot be made until further information on supply and costs are available from the Atomic Energy Commission. Since soft X-rays are produced mechanically with a loss of about 95% of the original electrical energy, their cost of produc-

tion seems to be excessive.

The food industry has built its reputation and success on the principle that foods must look and taste good and that uniform product quality must be maintained. Unfortunately, in radiation sterilization of foods, some undesirable chemical and physical changes take place. These changes are in direct proportion to the radiation dosage applied and vary in degree from product to product. For example bread, liver, and green beans have not been observed by most investigators to develop significant off-flavors and off odors. However, detectable off-flavors and odors are produced in milk with radiation levels of about 5 to 10% of those necessary for sterilization, while ten times these dosages produce no off-flavor in apple juice. For meat surface pasteurization, treatments up to 60,000 rep have produced insignificant off-flavors, while at sterilizing dosages of 2-million rep, off-flavors are generally produced.

The off-flavor and off-odor problem in irradiated foods is the number one

(continued on page 16)

H I J A C K E D

Two old mountaineers, sitting out on a cabin porch were examining an ancient armspiece. "Good shot-gun that," said the owner, petting the rusty relic. "It's killed possum, coon, wild turkey, and quirrels." "What's more," he added under his breath, "it got me two sons-in-law."

• • •

An \$8000 convertible shot by an Aggie in a jalopy. The driver leaned out and hollered, "Hey Smoe! What's making that awful rattle in that chariot of yours?"

"I reckon," answered the Aggie in the jalopy, "it must be the \$7500 jingling in my pocket."

• • •

They don't come any smarter than the man who managed to talk his wife into feeling sorry for the girl who lost her hairpins in the backseat of his car.

• • •

Judge: "Why did you asault this man?"

Aggie: "I was in a phone booth innocently conversing with my girl when this bohunk opens the door and heaves me out."

Judge: "Oh, and that incensed you?"

Aggie: "Mildly. But what really made me see red was when he reached in and heaved my girl out, too."

An old farmer asked a vet to give him a remedy for a sick cow. The vet gave him an enormous pill, instructing the farmer to put it in a tube and blow it down the cow's throat.

The next day the farmer was back, looking mighty sick and peak-ed. "What happened to you?" asked the vet. The man sighed, "The damn cow blew first."

• • •

An Animal Husbandry student ambled into the infirmary and announced, "Nurse, I seem to have picked up a first-class case of insomnia somewhere. I keep wakin' up every few days."

• • •

A sweet young thing looked dreamily at the ceiling and declared: "The man I marry must be an outstanding personality, be musical, tell new jokes, sing and dance, stay home, neither smoke nor drink, and shut up when I tell him to." The Aggie arose, found his hat and said, "Lady, you don't need a husband, you need a television set."

• • •

Men who do not object to fat women in slacks are said to be the fellows who take a broad view of life.

The reason a dollar won't do as much as it once did is because people won't do as much for a dollar as they once did.

• • •

Mrs. McDermott looked out of the window as the family was going in to dinner, and wailed, "Och, Sandy, here comes company. I bet they haven't eaten yet." Sandy, equal to the emergency, ordered, "Quick! Everybody out on the porch—with a toothpick."

• • •

The only passenger in a department store elevator was a good-looking, cocky Aggie. The cute operator called, "Up? Anybody going up? Please! Won't somebody go up?"

• • •

Abe Goldstein's son Ikey was in the outer office when the telegram came. The stenographer called out, "A wire from the salesman, Mr. Goldstein." "Read it to me," Abe called back from the inner room. So she started: "Was in Dallas Monday stop be in Houston Wednesday stop be in New Orleans Thursday stop— ." "Ikey," interrupted the boss, "leave that girl alone and let her read the telegram."

H U M O R

An Aggie in a hospital, recovering from a minor operation was awakened by a knock at the door. "Who goes there?" he inquired warily, "Friend or enema?"

* * *

One scientist finally succeeded in developing a bomb so powerful it could destroy the world. He couldn't resist trying it out. When the smoke had cleared away the only two things left alive on the earth were two monkeys somewhere in Tibet. The male monkey leered at his companion and asked, "Well, shall we start the whole thing over again?"

* * *

Girl: I nearly fainted when the fellow I was out with last night asked me for a kiss.

Aggie: Baby, you're gonna die when you hear what I have to say.

* * *

The elderly stock broker, age 75, carried his 19-year-old bride over the threshold. He introduced her to his household staff, and later asked his chauffeur what he thought of the new mistress. The chauffeur replied, "She's a beautiful lady, sir, but I hate to see a man start out on a day's work so late in the afternoon."

They're picking up the pieces with a dustpan and a rake,

Because he grabbed a silken knee when he should have grabbed the brake.

A Scotsman bought a nickel's worth of peppermint drops and took his bride for a honeymoon ride on a street car. When they got off the car, he said: "Honey, suppose we save the rest of the candy for the children."

We have just received a list of the newly published college textbooks. Please observe the list and note the well-known authors.

A. ARTS AND SCIENCES

"Studio Art"	<i>J. Fred Muggs</i>
"Principles of Democracy"	<i>Joseph Stalin</i>
"Penmanship Simplified"	<i>J. Hancock</i>
"Handbook of Chemistry"	<i>Aristotle</i>
"Simplified Arithmetic"	<i>A. Einstein</i>
"High School Physics"	<i>Enrico Fermi</i>
"Fundamentals of Bacteriology"	<i>Joseph Lister</i>

B. TECHNICAL

"Modern Nutrition"	<i>Ghandi</i>
"Basic R.O.T.C."	<i>Hannibal</i>
"Product Transportation"	<i>Marco Polo</i>
"Innovations in Printing"	<i>Ben Franklin</i>
"Handbook of Surgery"	<i>Hippocrates</i>
"Dynamics of Rocketry"	<i>Wilbur Wright</i>
"Meat and Meat Products"	<i>King Herod</i>
"What's New in Wrapping Materials"	<i>King Tut</i>

C. GENERAL EXPLANATION

"Small Arms Master"	<i>Alex Hamilton</i>
"How to Make Friends and Influence People"	<i>Cleopatra</i>
"Choosing the Perfect Mate"	<i>Adam</i>
"Get the Most from Theatre Plays"	<i>A. Lincoln</i>
"Care of the Hair"	<i>Y. Brunner</i>
"How to Raise Funds for Personal Charities"	<i>Jesse James</i>
"Hazards of Driving"	<i>James Dean</i>

D. DO-IT-YOURSELF

"How to Handle Your Employees"	<i>Mickey Jolke</i>
"Do-It-Yourself Boat Making"	<i>Noah</i>
"Convert Your Furnace to Oil Heat"	<i>Profs. Shadrack, Meshack, Abednigo</i>

E. OTHERS

"Appreciating Modern Jazz"	<i>Peter Tchaikovsky</i>
"Sanctity of Marriage"	<i>Tommy Manstville</i>
"Life Begins at 80"	<i>Methuselah</i>

F. NOVELS

"Stars and Stripes Forever"	<i>Benedict Arnold</i>
"Custer's Last Stand"	<i>Gen. Custer</i>
"I Was an Hors D'Oeuvre"	<i>Jonah</i>

Chrysanthemums In The Garden

by Robert Smith '59

Chrysanthemums are truly the gems of the autumn garden. They provide the garden with lavish blooms and color when most of our summer blooming annual and perennials have bowed from the scene. These autumn beauties begin blooming in August and usually reach their peak in October. Long after we have stoked up our indoor heaters, these garden gems defy the chilling winds of autumn. In some years blooming continues right up to Thanksgiving Day or early December, depending, of course, on the severity of the weather and the particular location in which they are grown.

It is only natural for us to think of the fall season of the year when we think of chrysanthemums, but if we are going to enjoy the wealth of beauty which these flowers portray in the autumn, we must make our preparations in the spring. Spring planting is more desirable than fall planting. Fall planted varieties may not be well enough established to withstand the adverse winter conditions with resultant heavy losses.

The chrysanthemum has a long historical background. They were cherished by Confucious and are mentioned in his writings. This was nearly five hundred years before the Chris-

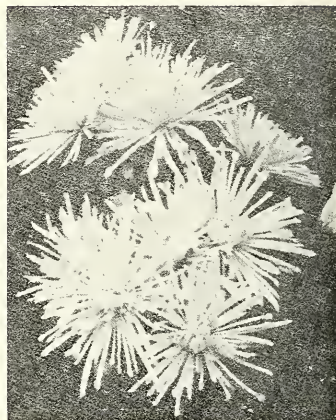
tian era. The Chrysanthemum was introduced into England in 1750 and came to America a century later. It is only in the past quarter century that it has become a favored garden flower. Previous to that it was grown mainly as a greenhouse plant. The present day Chrysanthemum barely resembles the original oriental plant. This great change has been brought about by many years of cultivation and hybridization.

Presently, there are five major classifications:

- (1) The Korean Chrysanthemums (*Chrysanthemum coreanum*)—tall, loosely formed plants producing both single and double gayly colored flowers mainly in October.
- (2) Northland Daisies (*Chrysanthemum arcticum*)—daisy like hybrids especially valuable for their disease resistant foliage and winter hardiness.
- (3) Cushion Mums—compact growing plants, one foot high and two feet wide. They begin blooming in late August or early September and continue until frost. They are useful as edging plants in the perennial border, bordering along paths and driveways, etc.
- (4) The Rubellum Hybrids—these are also low and bushy and flowering is mostly in shades of pink.
- (5) Pompoms—plants produce perfectly formed button-like blooms which range in size from one to four inches in diameter.

Chrysanthemum culture is not difficult, and luxuriant blossoms are within the reach of every gardener who is willing to assure the plants their few, but necessary requirements.

When selecting a site for Chrysanthemums, one should be chosen in which there is plenty of sunshine, adequate drainage, and some protection against high winds. If drainage is a problem, this can best be remedied by excavating the bed to a depth of sixteen or eighteen inches and placing a layer of broken bricks, cinders, or gravel beneath the soil medium in which the plants are to be grown. Some growers also grow their Chrysanthemums in beds slightly raised



Empire Spoon Variety

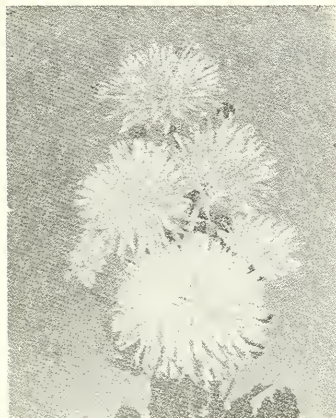
over the surrounding area as an aid in providing the necessary drainage.

The soil should be thoroughly prepared to a depth of ten inches, a three or four inch layer of well rotted manure should be incorporated in it, and it should be dressed with superphosphate. Compost or leafmold along with a dressing of a complete fertilizer may be substituted for the manure if it is not available. Chrysanthemums respond well to periodic applications of plant food during the growing season. An application should be made in mid June and another in mid July. Dried manure or a complete fertilizer may be used. This is scattered in a ring around the outermost portions of the plant, and is worked into the soil and followed by a thorough watering.

Chrysanthemums are spaced from one foot to eighteen inches apart, depending on the growth habits of the variety grown. Crowding should be avoided as free air circulation is necessary in helping to maintain the plants in a healthy condition.

When the plants reach a height of six inches, the tips should be pinched to induce branching. When the new branches have grown six inches these should also be pinched. The pinching

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Flicker Variety

OUR VANISHING WILDLIFE

by

Ray Hendrick '59



In the past 50 years a new word is being used more and more. This word is "Conservation" and it represents the thinking of the American people. Today those of us who are aware of what is happening to our Natural Resources are fighting to control their wanton waste. Our Natural Resources include water, soil, minerals, forest, and wildlife. It is difficult to separate any one of the subjects just mentioned as they all depend on one another, however, I will try to impress upon you the need for Wildlife Conservation.

To begin to appreciate our need for the conservation of our wildlife, let us turn back the pages of history. When our great grandfathers began to clear the wilderness and cultivate the soil, America boasted of an abundance of wildlife. On our western prairies, buffaloes, antelopes, and a variety of small mammals numbered in the high millions. In the autumn, hordes of migrating waterfowl flew southward, along the rivers and across the bays, past the mountains and across the prairies. Snow geese and Canadas, teal, widgeons, canvasbacks, scamp and the wood duck, also the mallard and pintail. With them came the beautiful white cranes, swans, herons and egrets. Always flying southward, some passed by and some descended on the water to rest and feed.

Our forest covered hundreds of thousands of square miles with stately trees, and harbored deer, elk, bear, moose, beaver and other wildlife in

abundance. Our lakes and rivers, ponds and streams, were clear of filth, and fish, large and small, lived and died according to nature's plan.

Since man has appeared on the scene however, great changes have taken place. Today there remain only remnants of the once magnificent wilderness and the creatures that lived in it. Gone forever are the passenger pigeons, the health hen, the Eskimo Curlew, the Ivory-billed woodpecker, and the Labrador duck. The Whooping Crane, Everglade Kite, California Condor, local species of prairie chickens and our own nation emblem, the bald eagle, are on the edge of extinction. Others in similar danger are the Woodland caribou, Florida Key deer, Tule elk, Walrus; even the largest of mammals, the Great Blue and Sperm whale are being reduced in numbers year after year. This is quite an impressive showing for mankind.

Each year from their nesting grounds fewer and fewer waterfowl make their autumn migration southward, and yet every year the army of hunters increase and attract thousands of new recruits. Each year thousands and thousands of acres of forests and marsh lands are destroyed to make way for the spread of suburban areas and industrial sites.

It is true advancement is necessary but let us consider what the National Wildlife Federation has to say about the subject, "Progress can't be stopped but it can be planned to protect the things that bring us pleasure, beauty

and relaxation. We must try and convince the selfish and educate the disinterested in the value of our wildlife and how it can be saved for the final benefit of all."

Now arises the question of just what good wildlife is to you and me. Many kinds of song and game birds feed upon the insect enemies of agricultural crops. So do shrews, moles, ground squirrels, and even larger species such as the skunk and fox. Other animals live to a great extent upon weed seeds.

Less often noticed and credited are the predatory hawks, owls, and furbearers that pursue the meadow mouse and similar crop-destroying rodents. The meadow mouse and its relatives are the most destructive of wild animals on the average farm. How important they may be was shown by a grazing experiment in a Michigan hay meadow. Small test plots were fenced with poultry netting pens in a field where sheep confined. Meadow mice were plentiful all though the alfalfa and inside the pens they were protected from skunks which were actively digging them out of the sod everywhere else. At the end of the summer it was found that mice had eaten approximately three-fourths of the hay within the enclosures. This was more than was taken by the grazing sheep outside of the pens. Also a study of a pastured area in northern New York showed that insects ate more grass and clover than cattle in

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INSECTA!!

by Harry Kruk '59
Richard Porter '59

Insects play an increasingly important role in the economy of agriculture. Here is the latest data on two important insects, the Common Cattle Grub known to all cattlemen, and the Meadow Spittlebug, plague to agronomists.

The Common Cattle Grub

The cattle grub problem is a very serious one with numerous cattlemen. "The losses to the cattle industry have been estimated at \$160 million annually." Cattle grubs have been a problem in this country ever since cattle were first brought into the United States from Europe.

Two species of cattle grubs are of importance in this country, the common cattle grub (*Hypoderma lineatum*), found in most parts of the United States and the northern cattle grub (*H. bovis*), found in the northern half of this country. Both species are essentially the same in the damage they do. The adult grubs (heel flies) create a great amount of fear among cattle during the egg-laying season and considerable injury often results when cattle run wildly in order to escape being bitten. Thus, cattle often show a decrease in milk production and suffer in loss of body weight due to the presence of the adult grubs. Skin penetration due to fly bites causes irritation to animals and damage to the flesh which must be trimmed out when animals are slaughtered. Perforation of the skin causes great losses in good hides when used for leather.

The adults, hairy, yellow and black flies about the size of the honey bee, lays eggs in rows attached to the base of the hair of cattle and also on their heels. These eggs hatch in a few days and the larvae bore into the skin of the animal. These larvae burrow through the body, between the muscles, to the abdominal and chest cavities where they feed for 6 to 8 months. Finally, they migrate to permanent locations under the skin on the back of the animal. They cut a small hole through the skin, become encysted, and complete their development in 5 to 7 weeks. As the larvae mature, they push through the holes in the skin and drop to the ground. Here they burrow in and form a pupal case from which the adult flies emerge after a period of 18 to 77 days—thus

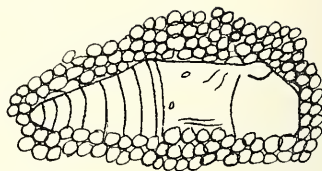
completing the life cycle. Only one complete cycle occurs during a single year.

Control — By keeping cattle in the stable or barn during the day, infestations may be avoided. The control of cattle grubs is accomplished by applying a larvicide during the time when the larvae are under the skin on the backs of the cattle. Rotenone is the only insecticide recommended for the control of cattle grubs. Finely ground cube or derris powder, which contains 5 per cent rotenone, may be applied as a spray, dust or wash. Powder spraying is generally recommended for large herds since it is the fastest method. Dusts are preferred by small herd owners and are desirable during cold weather. The dust must be rubbed into the grub cysts thoroughly. Correct timing of treatment is essential for satisfactory control. The proper time of treatment for a particular area can be determined by the county agent.

The Meadow Spittlebug

Spittlebugs have been known for some years, but have only recently increased in numbers to a point where they cause serious damage to legume forage crops. The injury occurs when the plant sap is extracted by the piercing-sucking nymphs and adults. Stunting of growth, shortening of internodes, dwarfing, rosetting, general loss of vitality, and low yields are some of the known effects.

Spittlebugs are abundant in the Eastern and North Central States. These insects produce little masses of



Nymph in Spittlemass



Adult Spittlebug

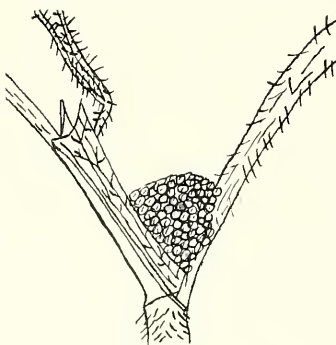
white froth that resembles spit around themselves and the stems of alfalfa, clover and other plants. The young bugs begin feeding very early in the growing season and cause surprising losses in yield.

The adult spittlebugs resemble leafhoppers; however, by close examination thru a field microscope they can be distinguished from them by two stout spines on the hind tibiae (fourth segment of the hind leg) and a circlet of spines at the base of each. There is considerable variation in color pattern; some are light tan, others mottled with dark brown and still others almost black.

The eggs are laid in rows between the sheaths and stems or in cracks of the stems or stubble of plants near the soil surface. The eggs are white at first later they turn light brown. The nymphs, which are found in the spittlemass, are yellow at first, but as they approach maturity they become tinged with green.

A kind of bicycle pump, formed of overlapping plates beneath the nymph's abdomen, provides a chamber into which air is drawn and expelled. This pump enables the nymph to mix air with the normal excretion of excess sap from the alimentary canal, thus creating a spittlemass. It is within this bubble mass that the immature spittlebug spends its early days, sheltered

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Spittlemass on Alfalfa Plant

TROUT--KING OF FRESH WATER FISH

by Norman Carpenter '58

What sport can excel the thrills and excitement of tangling with a big brown trout in a deep, crystal-clear pool? What sport can provide the relaxation and release from nervous tension that trout fishing provides? What better way is there to enjoy the invigorating out-of-doors, and to appreciate the complexities of nature?

Abundant in clear, cold mountain streams, the trout is the most desirable fish from the angler's standpoint. Both because its meat is tender and flavorful, and because it invariably puts up a valiant fight when hooked, the trout is the most highly esteemed game fish in the United States, and trout fishing has become a national pastime.

The trout spends most of the day hiding among rocks in deep pools, under logs or beneath branches; sometimes it lurks in eddies and pools at the foot of rapids.

The best time of the year to catch trout is from the opening of the season (in Pennsylvania, April 15), until late May or early June. At this time of year the water is high and slightly discolored, which makes it more difficult for the trout to see the fisherman. Heavy rains also bring many kinds of worms, grubs, and other spring insect larvae to the trout, famished after a long winter's fasting.

However the waters are not always roiled, nor are the trout always greedy or unwary. There are times when a fisherman could swear (and often does) that there are no trout in the whole darn creek, yet all he has to do to get fish is to alter his approach or his bait. The remainder of this article will be devoted to sure fire, proven methods of outwitting even the craftiest of this most regal piscatorial family.

Many fishermen think that all they have to do to catch trout is to anchor a snake-like night crawler to the bottom of a stream and wait for action, but this is seldom the case. While this method may catch trout the first few days of the season, or perhaps in the south end of a north-bound hatchery truck, it does not always "produce the goods" when the trout becomes more familiar with man's attempt to eliminate them.

As the season progresses and the water clears up, small worms are much more effective than large ones. Strange as it may seem, in clear water

I have often caught the biggest trout of the day on the smallest worms. Never underestimate a trout's eyesight; they can undoubtedly see much better than we can.

In heavily fished waters, trout often refuse to take a worm regardless of how natural it may look. In these circumstances it is the fisherman with many diversified baits that goes home with the fish in his creel, not in the creek. Some of the most effective secondary baits are salmon eggs, hellgrammites (dragon fly larvae), grubs, minnows, crickets, grasshoppers, and other natural trout food.

A few years ago in early May I was all set to make a killing on the Wissahickon Creek in Fairmount Park, but found to my dismay they weren't biting. Five other fishermen in the area were suffering from the same malady, and they had tried just about every natural and artificial bait in the book. I knew the fish were there however, because I could see them swirling every now and then. Finally, as I felt something crawling down my back, it dawned on me! That year we had had an unusually heavy infestation of inch-worms, and the trout must be feeding on them! I tied on the smallest hook I had, picked a half-dozen of the tiny, greenish caterpillars from nearby bushes, and within twenty minutes I had caught two nice rainbows and a small brownie.

Almost as important as the type of bait used is the manner in which it is fished. In the Spring when the water is high and cold it is best to use a light sinker, just heavy enough to put the bait on or near the bottom. As the water warms up however, the fish become more active and will follow a bait a short distance to "size it up." Then it is important to make the bait appear as natural as possible to the trout, perhaps even to the extent of using no weight whatsoever, letting the bait drift along with the current.

When using salmon eggs, the approach can be slightly modified. Use a hook small enough so that the barb and the bend of the hook are buried in the egg. Number 10 or 12 Eagle Claw hooks are ideal. Place one or two BB shot a foot or so above the hook so that there is just enough weight to take the salmon egg to the bottom, yet not enough to anchor it there. Then, by occasionally lifting the

rod tip, let the salmon egg "roll" along the bottom of the pool. The smooth, round eggs will seldom get snagged even in rocky stream beds, while a worm fished in this manner would.

The type of tackle used is another item that cannot be overlooked. Undoubtedly the most productive tackle and the easiest to use is the spinning outfit. The spinning reel, operating on the "fixed spool" principle, enables even a beginner to cast a light bait or lure into parts of a stream inaccessible with bait or fly casting outfits. It eliminates backlash and false casts, thus the bait is in the water a greater part of your fishing time.

Spinning line is made of light weight monofilament, similar in appearance to leader "catgut" only thinner in diameter and more pliable. This type of line is almost invisible in the water. When monofilament line is used the hook can be tied directly to the line, as no leader is necessary.

Spin fishing for trout with lures is second in enjoyment only to fly fishing. Spinning lures, consisting of small spoons and plugs, spinners, and weighted flies are excellent producers when it comes to taking nice sized trout. Many of these lures make trout fishing almost too easy, as all you have to do to give action to the lure is cast it out and reel it in. Some of the best lures for trout are the Colorado Spinner, the C. P. Swing, and other shiny spinners. The F-4 silver Flatfish is another exceptionally good trout lure when retrieved at the proper speed. Its darting, wobbling action combined with the glint of its silver finish prove irresistible to aggressive or hungry trout.

Fly fishing is the most difficult yet most enjoyable mode of trout fishing I know of. There are many beautiful streams in the Poconos in which trout will take flies quite readily. The Bushkill Creek above Stroudsburg, Pa., is restricted entirely to flies, but is stocked very heavily with bigger-than-average trout to insure plenty of action. The best wet flies to use in this particular area during late April and May are White Grub, Royal Coachman, Pennsylvania Bread Crust, and other small brownish or greenish flies. These wet flies are made to imitate drowned insects, live insect nymphs, or water bugs. Dry flies are primarily

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RADIATION - -

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problem that must be overcome before the food industry can make wide application of this process. Research workers express confidence that by the proper selection and combination of various techniques, foods can usually be protected against radiation-caused flavor changes. This problem is being pursued diligently in various laboratories using both the technical and fundamental methods of approach.

A number of protective methods to control quality characteristics of foods being irradiated have been suggested, these include; irradiation in the frozen state, in vacuum, under inert gas, in the presence of various chemicals, with the elimination of oxygen dissolved in the foodstuff prior to irradiation, and by combinations of these treatments.

Negative results obtained with irradiated samples of 24 elements occurring in food indicate that induced radioactivity is no problem in radiation sterilization of foods. However, before radiation processed foods can be recommended for large-scale consumption by humans, conclusive evidence of the absence of acute or chronic toxicity must be established. Feeding tests with rats and other animals have shown no indication of any toxic effects.

Another important factor in evaluating radiation sterilization of foods is its effects on food nutrients. Some sacrifices in nutrients are made in all types of food preparation, processing, and preservation. The same must be true for radiation sterilization.

It is generally believed that when know-how is developed to inhibit deleterious chemical reactions taking place during irradiation to overcome the off-flavor, off-odor problem, by the same common denominator the toxicity and nutrient retention problems will also be alleviated.

Whether the consumer prefers raw or partially cooked products in preference to those requiring little or no preparation before serving must be taken into consideration and particularly emphasizes the fact that consumer reaction to new products and consumer education are most important factors and difficult areas in which to predict results.

Foods spoil most frequently because of bacteriological and enzymatic action. Although ionizing radiations are effective in destroying bacteria, about 5 to 30 times the dosage is required to destroy enzymes. Such radiation dos-

ages denaturize foods and render them inedible. Therefore, a mild heat treatment to destroy enzymes, followed by irradiation, seems to be a logical possible treatment for investigation for some foods.

The general belief in the food industry today is that there will be some application of ionizing radiations in the preservation of foods within the next ten years.

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CHRYSANTHEMUMS - -

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of tips should be continued until about July 1. This produces a sturdier plant less susceptible to being blown over by strong winds. No pinching is necessary for cushion mums.

Even though plants are pinched, staking may still be necessary, especially in the case of the taller growing sorts. Each stem may be staked and tied individually or, if desired, three stakes may be placed around each plant, encircling it with green twine.

Chrysanthemums should never be allowed to dry out. For optimum growth, a minimum of one inch of water each week is required. Watering is best done by using a Soil Soaker or by allowing water to seep slowly into the ground from a slow running hose placed on a board. The watering should be thorough. Every precaution should be taken to avoid wetting the foliage as this will encourage fungus diseases.

Chrysanthemums may be attacked by several pests, the most important ones being aphids, red spider, thrips, and nematodes. Aphids, red spider, and thrip may be controlled by spraying the plants with nicotine sulphate or rotenone. Plants badly infested with nematodes, which may cause defoliation as well as bud distortion, should be destroyed. Leaf Spot, a fungus disease, may be controlled by spraying the plants with Bordeaux mixture or a ferbam containing fungicide.

Propagation of chrysanthemums is best performed by either cuttings or division. Chrysanthemum plants should be divided every other year, retaining only the outer portions of the clump and discarding the woody centers. Personally, I prefer to grow new plants each year propagated by cuttings the previous season. The method I use is as follows: In late

June or early July when I give the plants the final pinching, I place the tips in a rooting medium such as perlite or sharp sand. Then these are cold framed to overwinter. Since the plants are small, they do not take up much room in the cold frame and are easily handled. The following spring, I remove the plants from the cold frame and transplant to a prepared bed. The parent plants of the previous year are discarded. It has been my experience that plants reproduced in this way are far superior to plants which grow year after year from the same clump. They produce a plant which is sturdier, more vigorous, and less susceptible to disease.

rooted, I plant them in rows in the garden to develop a vigorous root system. In October, I lift these plants from the garden and place them in a

When chrysanthemums are to be overwintered in the garden, they should be mulched with a layer of salt hay, evergreen boughs or any material that will not mat and smother the plants. This is placed on after the ground freezes. In some localities where severe winters occur, choice plants which may not be reliably hardy should be lifted and placed in a cold frame.

Some interesting varieties are:

Autumn Lights, Avalanche, Butter Ball, Canary, Chickadee, Chippewa, Cockatoo, Flicker, Glean O' Gold, Harbor Lights, King Midas, Lavender Lady, Macaw, Magnolia, Pink Radiance, Pomponette, Robin, Red Velvet, Tanager, Towhee, Summertime, and Symphony.

INSECTA ! ! -

(continued from page 14)

from the direct rays of the sun and kept moist by the foam. For millions of years it has been employing its own form of air conditioning.

Egg laying is begun around the first of September and continues until the females are killed by the cold weather. The overwintering eggs begin hatching about the middle of April and they reach the adult stage in about 45 days, or around the end of May. Only one generation is produced per year.

Although the adults are present throughout the summer, feeding on a variety of plants, their damage is not as evident as that of the nymphs in the spittle masses. Adults migrate by jumping or by flying short distances. Whenever a crop of hay is cut they migrate to adjacent areas, causing a noticeable increase in numbers.

Control—The plowing under of any crop which harbors overwintering

eggs will eliminate nymphal damage to the new planting on that soil. Good control of nymphs can be obtained with a 5% benzene hexachloride or toxaphene dust applied at a rate of 20 to 30 pounds per acre. One pound of methoxychlor per acre in a spray suspension or emulsion is also effective even when applied in as little as 5 gallons of spray per acre. For maximum protection the insecticide should be applied before the new growth exceeds 3 inches and before many of the young bugs have become enveloped in froth. Methoxychlor should be used when the crop is to be used for hay or silage, because it will not leave a toxic residue if applied as recommended. Lindane, benzene hexachloride, and toxaphene should be used only on crops being grown exclusively for seed.

Rotenone, although more expensive, can be safely used for spittlebugs on crops grown for hay, forage or food. Control of adults is difficult because of their migratory habits and of the danger of toxic residues on favorable hosts such as forage and hay crops. However, legumes grown for seed or other crops where the residues will not be a hazard, may be treated with DDT or Methoxychlor at 1.5 pounds of actual chemical per acre applied before bloom.

WILDLIFE - -

(continued from page 13)
the same field.

Damage in shocks and granaries, and tree girdling in orchards, are also apparent. These small mammals must be kept under control and in nature's plan of life, the hawk, owl, and fox control them. Many farmers criticize our hawks and owls because they are said to be "chicken hawks" and should be shot on sight.

Let us consider this point. One female mouse will breed at the age of four weeks and may have 17 litters a year, with five or six young in each litter. A few happy families in a field or stand of grain can destroy approximately 40 percent of the crop. This should be enough reason for a farmer to encourage feathered and furred predators that might reduce his loss.

Let us, however, look at this problem more closely. Through surveys made by the National Audubon Society it was shown that insects, rats, and mice made up more than 60% of the common hawk's diet. In the case of the rough legged hawk, 75% of their food supply was rats and mice. Yet

many farmers ignorant of the facts continue to kill these valuable birds and in doing so permit the rats and other rodents to multiply beyond their normal abundance.

The greatest value of wildlife is simply the enjoyment which people, young and old, get out of having it around. Consider for a moment, the cardinal that sings from a tree beside the barn, the meadowlark that flies into a hay field, or a redwinged blackbird that calls from the top of a cattail in a marsh. Which one of us can honestly say they don't get a thrill from seeing a deer silhouetted against the horizon, a wedge of geese flying north in the spring, or listening to a far-off whippoorwill on a still summer night.

These are a part of everyday America to some people. When they are gone you miss them, and unless we plan carefully and think wisely the day might come when these things we take for granted will disappear.

Now arises the question of what is being done to help conserve our wildlife. The United States Department of the Interior in cooperation with the Fish and Wildlife Service have established a series of National Wildlife Refuges throughout the country. The object of these refuges is to save "some areas from encroachment and by preserving in them or restoring where necessary the conditions that wild things need in order to live." Some of these areas are located along the flyways that our waterfowl use in their annual migrations. These refuges supply them with food, cover, rest and protection. Among them are the Parker River in Mass., Bombay Hook in Delaware, and the Blackwater in Maryland.

Some of these refuges protect our rare species of wildlife, such as the Aransas refuge in Texas, which the whooping crane frequents. (At the last count only 25 still existed.) Other refuges provide food, rest, cover, and protection for such animals as our remaining buffalo, antelope, moose, and bear.

In addition each state has its own state parks and forests. These too help to preserve timber, soil, water, and wildlife. These state parks and refuges are very popular and attract up to 40 million visitors each year. Most of these people come to ease the tensions of everyday life and marvel at the glory of nature. Local citizens interested in wildlife conservation form clubs, etc., and carry on various pro-

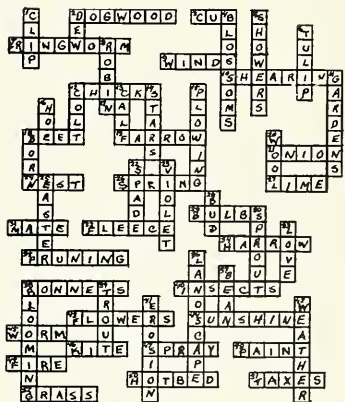
grams designed to benefit the wildlife in their area. The programs are carried on by people young and old, who do not want their children and grandchildren to grow up in a world of nothing but concrete and asphalt. Conservation-minded citizens carry on such activities as building nesting boxes for our native birds, planting trees and shrubs in what might otherwise be desolate areas, and check the pollution of our rivers, lakes and other waterways. The conservation idea is constantly growing and today the farmer is learning to appreciate and help the wildlife found on his farm. He helps by planting multiflora rose as a "living fence," building small ponds for better fishing and constant water supply, and also by using better land-management to control soil erosion and establishing a means of income through his farm woodlots. Some of today's farmers have found out that they can produce much wildlife without cutting down on the amount of wheat, beef, or hay that they produce.

People today realize that healthy wildlife crops do not come from polluted waters and abused land—these bring nothing but disease and desolation. As Americans we should all be proud of our American heritage, and we should try to do our part to help preserve it.

"Remember the future of our people and our nation depends upon the intelligent use of our natural resources."



Answer to Crossword Puzzle Found on Page 19



TROUT - -

(continued from page 15)

supposed to imitate live or dead bugs and insects that are floating on the water's surface. By twitching the rod tip gently you can make the dry fly appear to be "swimming" or struggling for dry land. Better dry fly patterns are the Royal Wolf, May Fly, and Black Gnat.

Streamer flies are usually taken by the larger trout. These long, stream-lined flies can be made to dart and skip, just like a small minnow in search of food. When retrieving a streamer, twitch the rod tip occasionally, then pause for a few seconds, particularly near submerged rocks and logs and other "trouty" looking places. Some of the best streamer fly patterns for the eastern United States include number 8 or 10 Mickey Finn, Black or White Marabou, and the Brown Dace.

Just as with bait, the trout are often very particular as to which fly they will strike at and which fly they will ignore completely. It depends almost entirely upon the availability of certain natural foods under certain climates and conditions.

One cloudy day early last May I was fishing the Recessa Falls area of the beautiful Bushkill Creek. I had fished for over an hour with two or three of my favorite wet flies, but with no success. Those wary browns had me stymied. It was evident that they were feeding, but on what? There were no fly hatches coming off the stream, no minnows skipping out of the water, yet trout were rising right in front of me.

That morning I had been bitten several times by gnats, so on a hunch I tied a number 18 dry Black Gnat, the smallest fly I had, to my two-pound test leader. Before casting I spent a few minutes soaking the fly thoroughly so that it would not float, but drift along just under the surface. Apparently this was just what the doctor ordered. On my second cast I saw a swirl where my black gnat was, and I struck. Almost instantly a beautiful brownie came streaking out of the water, fly in mouth, trailing leader and line behind him. In my excitement I overestimated the strength of my leader, and after a brief fight the trout was gone, taking my only black gnat with him. I fished that pool for the rest of the morning and only succeeded in landing one trout, that on a black marabou streamer. This trip, while not too productive, nevertheless provided me with an unfor-

getable experience, as well as thrills and surprises that so frequently are enjoyed on fishing trips.

* * *

Speeches are like the horns on a steer—a point here, a point there—with a lot of bull in between.

* * *

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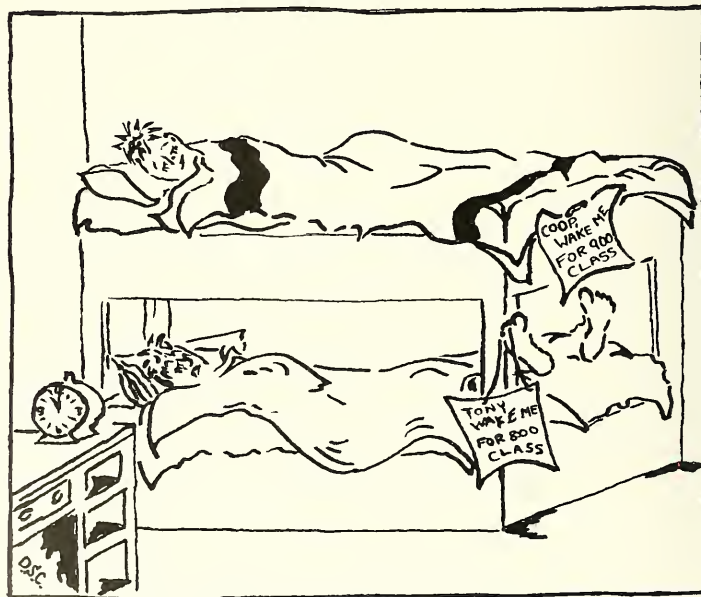
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Hunting Supplies

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OUR HEROES



CROSSWORD PUZZLE

Answer on Page 17

by Jim Diamond

(ACROSS)

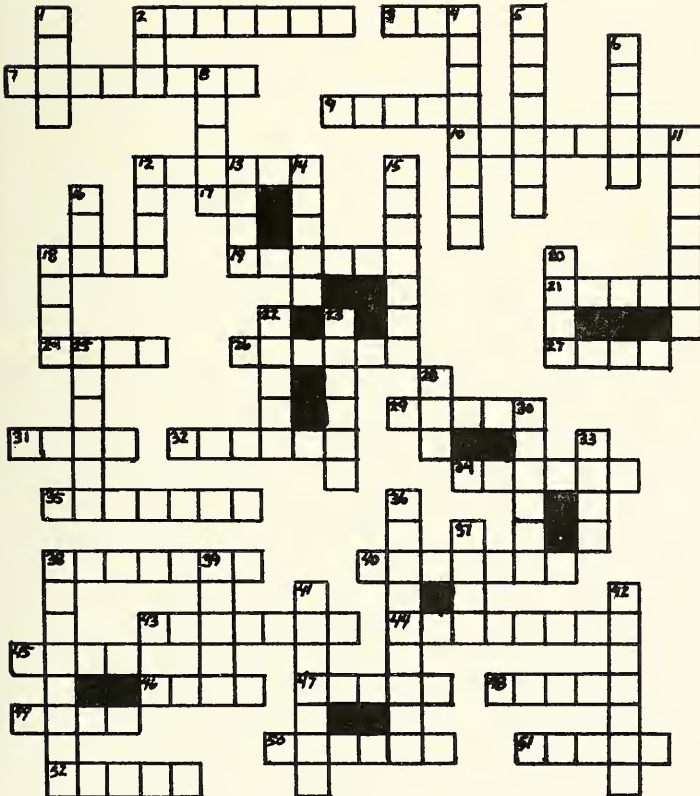
2. An ornamental tree with large white or pinkish flowers that bloom in the spring
3. A young bear
7. A skin disease on cattle
9. March brings these
10. Sheep get this every spring
12. Poultry growers are now buying these
17. National Aggies (abbrev.)
18. A biennial plant whose root is edible
19. To produce a litter of pigs
21. An edible succulent bulb
24. Birds make these
26. First season of the year
27. An oxide of Calcium
29. A bud, having fleshy leaves
31. One joined to another in any pair
32. A coat of wool that covers a sheep
34. A soil tilling implement
35. To cut branches or twigs off in an orchard
38. Women wear these on Easter
40. A pest to farmers
43. Blossoms of a plant

44. A natural source of vitamin D
45. A slender-long bodied bilateral invertebrate
46. A light structure flown in the wind
47. Used to kill insects, micro-organisms, and fungus
48. Applied on a surface for artificial color
49. The active principle of combustion
50. A bed of earth, heated by fermenting manure
51. A payment of money used for government services
52. Plants on which grazing animals pasture

(DOWN)

1. To trim by cutting
2. Moisture condensed from the atmosphere
4. The flower on a fruit tree that produces the fruit
5. April brings these
6. A bell shaped spring flower
8. A spring bird
11. A plot of ground for ornamental plants
12. A young horse

13. A young cow
14. Luminous points in the skies at night
15. Farmers are doing this now to plant crops
16. A garden implement
18. Brought forth by birth
20. Sheep produce this product
22. A tool for digging
23. A spring flower
25. A holiday after the first full moon that occurs on or next March 21
28. A small auxiliary protuberance on a plant
30. To begin to grow
33. A strong passionate affection for a person
36. A view of rural scenery
37. An edible nutritious seed of leguminous plants
39. Blossoming of a flower
39. A fish
41. A process where earth is worn away by water
42. State in the atmosphere with respect to wind, pressure, temperature, moisture, etc.



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THE END